Technical Support Services Contract
Solicitation G14PS00053
Questions and Responses from EROS Site Visits
December 2, 2014

1. **Question:** Can you provide more information on how/what Landsat 7 and 8 data comes to EROS?

   Government's Response: Landsat 7 downlinks data to EROS both live (e.g., over North America while in view of the EROS antenna) and from its recorder. However, Landsat 7 is unable to downlink all data directly to EROS due to data volumes. Some data is downlinked to other stations that are part of the U.S. ground station network or the International Cooperator network. This is sent to EROS via the internet.

   Landsat 8 downlinks all data to EROS or other U.S. sponsored ground stations located at Svalbard, Norway and Fairbanks, Alaska. Data downlinked to Svalbard or Fairbanks is sent to EROS via the internet. While Landsat 8 data is downlinked directly to International Cooperators, all Landsat 8 data is kept on the on-board recorder until it is sent to a U.S. sponsored ground station.

2. **Question:** Is all Landsat data archived at EROS?

   Government's Response: Yes. Today all Landsat 7 and Landsat 8 data is archived at EROS. However, past missions (Landsats 1-5) did not have on-board recorders and required in-view ground stations to obtain data over the areas covered. Those data were generally archived at that site and made available to users from the various cooperating agencies. Today, EROS is working on an effort to consolidate all those data from cooperators into the EROS archive. The Landsat Global Archive Consolidation (LGAC) has made huge progress in obtaining archived Landsat data from International Cooperators. Many of these data are on obsolete media requiring transcription and various levels of processing before the data are made available to users. The effort to collect these data started in 2010 and is expected to continue for several years. Approximately 50% of the estimated data from these collections is now at EROS.
   (http://landsat.usgs.gov/Landsat_Global_Archive_Consolidation.php)

3. **Question:** What is in the three computer rooms – is there a specific function for each?

   Government's Response: The USGS EROS Center has three computing centers located in the facility. Projects populate those centers with hardware and associated peripherals to accommodate their project requirements. Network Services provides extensive network connectivity and the facilities staff provides power and HVAC infrastructure to the rooms. Projects then connect to the provided power and network capabilities.

   Computer Room 1 (CR1) is the most mature (oldest) of the three computer rooms. The room currently houses racks of servers providing data distribution, data archive, and science resources. The room provides approximately 7,340 square feet of raised floor space to accommodate the hardware requirements.

Computer Room 2 (CR2) is the largest of the three computer rooms, measured in square feet. The room currently provides computer resources for our Landsat activities. The room also houses computer resources for the Land Processes Distributed Active Archive Center affiliated with the National Aeronautics and Space Administration (NASA) Earth Observing System (EOS) Program. The room provides about 7,800 square feet of raised computer room space.

Computer Room 3 (CR3) is the smallest of the computer rooms at EROS. The room is generally used to house collaborator systems that are local to our Center. The room also houses considerable network communications gear to accommodate the massive amounts of data being received and distributed from EROS. The room provides about 3,000 square foot of raised computer room space.

Overall, the Center houses over 700 servers and considerable data storage capabilities. The Internet and Internet 2 network connectivity accommodates approximately 6 Gbps of incoming and outgoing data. A greater than 5 Petabyte (PB) SL8500 tape silo system is located in CR1 and accommodates considerable project data and system backups. This technology is supported by numerous technicians and is heavily depended upon by our managers, engineers, IT specialists, and scientists.

4. **Question:** What is meant by cooperator systems as it pertains to the various systems in the computer rooms?

   Government's Response: Cooperator systems are systems brought to EROS from other agencies or cooperating projects outside of EROS. EROS works with various agencies that may require common systems. An example is the Landfire project which is a collaborative effort among several federal agencies (http://fire-research.cr.usgs.gov/landfire.php)

   EROS is also one of six designated Core Data Centers in the Department of the Interior. Some cooperator systems are part of this data center consolidation effort.

5. **Question:** What does NARA stand for and how does EROS fit in.

   Government's Response: NARA is the National Archive and Records Administration. EROS was designated as the National Satellite Land Remote Sensing Data Archive (NSLRSDA) through the Land Remote Sensing Policy Act of 1992. (http://eros.usgs.gov/nslrsda/overview) Additionally, EROS is working with NARA to be an affiliate archive for other data.

6. **Question:** Is the entire film archive available digitally now?

   Government's Response: No. Approximately 25% is currently available, with the majority existing within the USGS-acquired aerial collection. There are still aerial collections from other agencies and also numerous film-based satellite collections (e.g. Declass) that have not been digitized.

7. **Question:** What do you do with the deteriorating film?

   Government's Response: Acetate-based film is being digitized through locally developed (i.e., Phoenix V) systems. After being digitized, film is sent to a NARA cold-storage facility which helps to slow down the deterioration.

8. **Question:** Have any film degraded beyond recovery?

   Government's Response: No. We have been able to recover all of our film data either through digitization or film duplication.

9. **Question:** Is the aerial photography only US-based? And would we ever collect film from other countries?

   Government's Response: 97% of the aerial photography is U.S.-based data. However there are some data not over the U.S. to support various activities. The film-based satellite data is a variety of global data. All incoming new collections need to go through our records assessment process (see EROS-OPS-01_Acceptance_of_Data_Collections_by_the_USGS_v1.3.pdf)

10. **Question:** Can you describe your archive philosophy and how data is archived?

    Government's Response: There are two different archive scenarios that take place- Deep archive practices and copy of convenience practices.

    Deep Archive

    For USGS-owned digital collections, three separate tape copies are created on a minimum of two different media types (i.e. StorageTek T10000 (T10K) and Linear Tape-Open (LTO)). Two copies are kept locally and one copy is sent offsite. (see EROS-POL-02_Electronic_Records_Preservation_Policy_v1.1.pdf).

    Copy of Convenience Archive

    For non-USGS acquired collections, we still have a responsibility to safe guard our copy but do not have a NARA requirement to maintain on offsite copy. For that reason, two tape copies are kept onsite on two separate media types.

    Additionally, some projects maintain an on-line copy of data for processing and/or distribution. Heavily used data such as Landsat is generally also on-line.

11. **Question:** How big is your network bandwidth?

    Government's Response: EROS has four networks supporting the center. The standard Internet connection and the DOI Intranet are both a 1GigE bandwidth. The Starlight/Internet2 connection is a 2.4GigE bandwidth. Also available is the South Dakota Research, Education and Economic

Development (REED) network at a 10GigE bandwidth supporting high speed connectivity to various universities.

12. **Question:** Can employees or cooperators get outside the EROS firewall (e.g., to get to company networks or uses VPN)?

    Government's Response: The EROS network is set up in several "zones".

    - Collaborator Zone: non-DOI collaborators with access outside the DOI Firewalls
    - DOI Data Center Consolidation Zone: DOI systems (but not USGS) to consolidate servers and applications in and is open to DOI Intranet
    - USGS Zone: USGS consolidation efforts
    - EROS Trusted Zone: EROS systems and official traffic
    - Guest Zone: Visitors and non-GFE device access

    The current TSSC contractor and prior contractors have inherently maintained and paid for a company network connection through Alliance Communications that is located in the EROS TSSC office area. In the past, our networks were not able to allow external company VPN access.

13. **Question:** How much solid state or spinning storage does EROS have?

    Government's Response: EROS has over 6 PB of solid state or spinning storage from Storage Area Networks, Network Attached Storage, and Direct Attached Storage (does not include internal disk used for operating systems or any desktop systems)

14. **Question:** What are the staffing hours (e.g., like Landsat Operations)?

    Government's Response: Generally, staffing is 8 hours per day Monday – Friday. However, some tasks have requirements for shifts or on-call work. Additionally, there may be occasional requirements for off-hours support due to systems issues or emergencies. These are generally handled on a case-by-case basis.

    The Long-term Archive task (Task Order 25) supports scanning of aerial film products and the current scanning operation is staffed 24x5.

    The Landsat Ground Operations task (Task Order 140) supports satellite data reception and command upload. The current operation is staffed 19.5x7 and also requires on-call support for critical support staff such as senior operations staff, systems administration, networks, and hardware engineering. Operators of systems for data ingest and processing currently work 16 hours per day Monday-Friday and 8 hours on Saturday and Sunday.

    The Land Processes Distributed Active Archive Center (LPDAAC) task (Task Order 19) requires evening shifts and week-end support. Currently, operations are staffed 6:00am - 1:30am Monday – Friday and 3:00pm - 1:30am Saturday and Sunday. However, the hours of operations are flexible for the TSSC contractor to determine as long as evenings and week-ends are supported. This task also

requires on-call support for system support staff such as systems administrators and data base administrators.

The Center Information Technology Team (CITT) task (Task Order 156) supports the EROS networks and requires on-call support in addition to standard Monday through Friday support to respond to critical network issues.

15. **Question:** How does EROS work with the various cooperators – do they call the helpdesk for support?

    Government's Response: Each cooperator has a Service Level Agreement (SLA) with EROS for any necessary support. The helpdesk, TSSC staff, or USGS Government staff may be designated as a Point of Contact depending on the need of the cooperator.

16. **Question:** What is TSSC's role in IT security?

    Government's Response: The USGS Government staff is responsible for and direct IT security. However, the TSSC staff has a major role in assuring IT security at EROS. The TSSC staff provides risk assessments, Assessment and Authorization (A&A) documentation, processes, etc.

17. **Question:** How does EROS forecast requirements for technical or facility activities?

    Government's Response: There are multiple ways that requirements are gathered and forecast. EROS has a Coordination Requirements Office that helps gather requirements and coordinate activities. Additionally, each project is responsible for managing and forecasting requirements at a technical level. (e.g., equipment needs for future year(s)). For large projects like Landsat, the Capital Planning and Investment Control process also includes various processes that are required for requirements management and forecasting.

18. **Question:** How does EROS handle emergency response activities across projects (i.e., Hurricane Katrina)?

    Government's Response: EROS has an Emergency Response project that handles the majority of the response ingest and distribution requirements within the project. Catastrophic events (e.g., Hurricane Katrina) may require that tasks be spread across the center and filled by staff in other areas. These occurrences have been isolated.

19. **Question:** Are EROS projects using the "Cloud"? Do we have a plan to use the cloud?

    Government's Response: DOI currently has a Cloud contract in place. USGS is still working on how the cloud will be used.

20. **Question:** For Sample Task 1, is that work we are currently doing? Can you provide more information about the existing system architecture and its interfaces?

Government's Response: This task is intended to be a sample development task and is not currently work performed or planned.

In the SOO for Sample Task 1 in part II it states, "For the purposes of this sample task, the contractor should assume a new development of this subsystem and not simply reuse or modify the existing Landsat 8 Ingest subsystem." Additionally, in Section M, Factor A it states, " Sample tasks shall demonstrate appropriate level of skills associated with the work, appropriate level of risk, innovative approaches, project management maturity, and effective communications with the Government." As a new development effort, it is not expected that this use existing system architecture. As Section M indicates, the Government is looking for the offeror's approach to new development work; however, while not use existing system architecture or detail of the offeror's architecture of the system.

Section 3.1.3 of the reference document LDCM-OCD-007 includes the operations concept for this subsystem, a block diagram, and a context diagram showing interfaces.

21. **Question:** What is the approximate size of the education and outreach efforts? Is it primarily web-based activities?

    Government's Response: Our current activities are not large approximately 2-3 government staff and about half a dozen contract staff.

    Activities include web-based tools as well as instruction on utilization of our data and tools associated with data.

22. **Question:** What kind of ticketing system does EROS use (e.g., helpdesk)?

    Government's Response: For the CITT area, EROS uses both Remedy and a home grown SharePoint based trouble ticketing system for the help desk. Serena business manager is also used for configuration/change management.

23. **Question:** Is the helpdesk tiered?

    Government's Response: Yes. There is a tier 1 call center and a tier 2 support desk.

24. **Question**: Can contractors bring new tools or innovative technologies to EROS activities?

    Government's Response: That is up to the contractor within the requirements specified in the RFP.